120,603

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11/1871

293. VEHICLE FENDERS.

Adam Wellshmidt. Albany. N. Y.

Brake for Cars Locomotives &c

No. 120,603.

Patented Nov. 7, 1871.

Fig. 1.

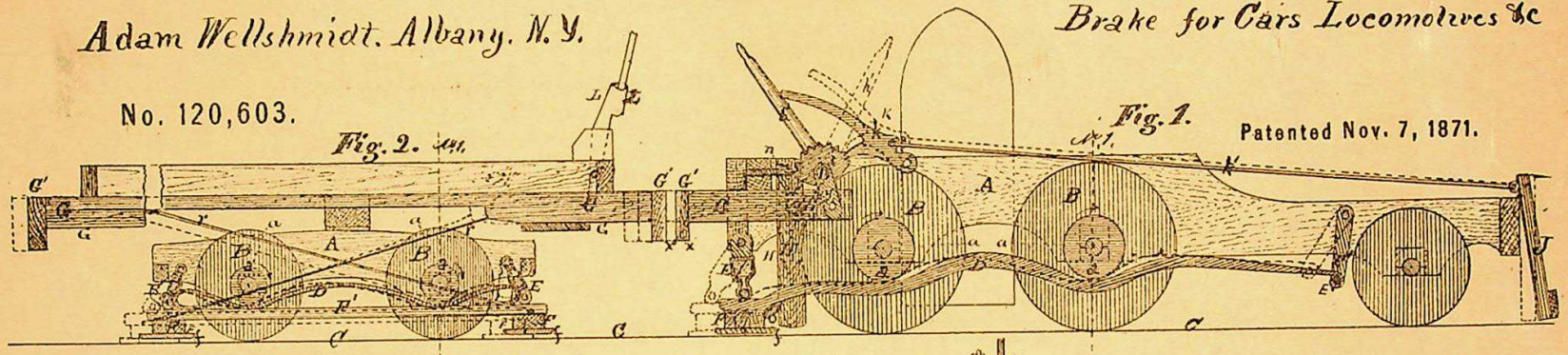


Fig. 2.

Fig. 5.

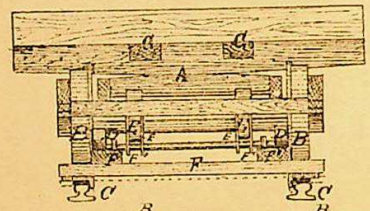


Fig. 6.

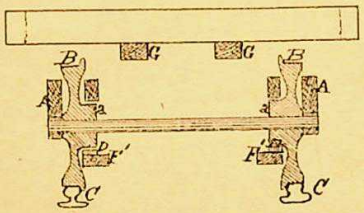


Fig. 3.

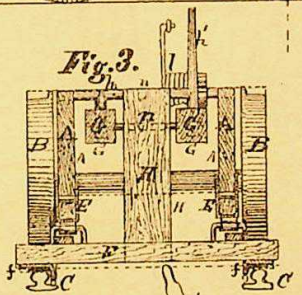


Fig. 4.

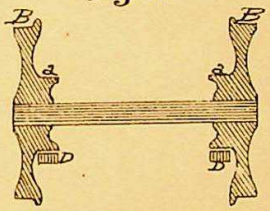


Fig. 8.

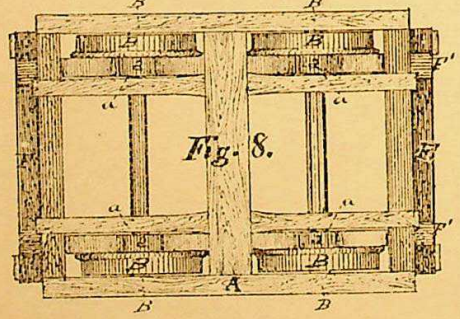


Fig. 7.

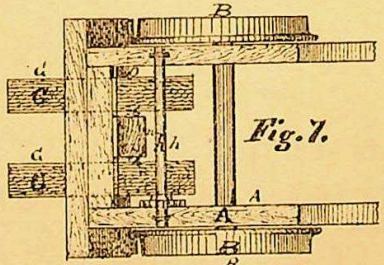
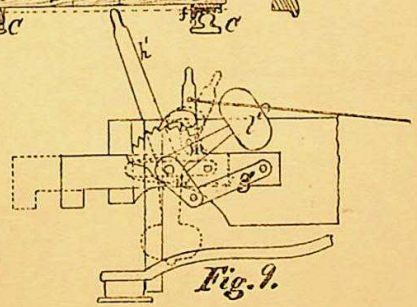


Fig. 9.



Witnesses.

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Alex Selkirk

Adam Wellshmidt

Inventor.

X Brakes, Rail,

6

EXAMINER.

120,603

UNITED STATES PATENT OFFICE.

ADAM WELLSHMIDT, OF ALBANY, NEW YORK, ASSIGNOR TO HIMSELF AND ANTON F. WALDBILLIG, OF SAME PLACE.

IMPROVEMENT IN RAILWAY-CAR BRAKES.

Specification forming part of Letters Patent No. 120,603, dated November 7, 1871.

To all whom it may concern:

Be it known that I, ADAM WELLSHMIDT, of the city and county of Albany, State of New York, have invented certain new and useful Improvements in the Construction and Operation of Brakes for Railroad Cars and Locomotives; and I do hereby declare that the following is a specification thereof, reference being had to the accompanying drawing forming a part of the same, in which—

Figure 1 represents a longitudinal vertical section through a locomotive, illustrating the improvements. Fig. 2 represents a longitudinal vertical section through a truck, illustrating the principal features of this invention. Fig. 3 is an end view of a locomotive constructed with the improvements. Fig. 4 is a cross-section through Fig. 1 at line No. 1. Fig. 5 is an end view of a truck illustrating the invention. Fig. 6 is a cross-section through Fig. 2 at line No. 1. Fig. 7 is a vertical view from above of the end of a locomotive with the improvements. Fig. 8 is a vertical view from above of a truck constructed with my improvements. Fig. 9 is a modification of the tipping apparatus used with this invention.

The nature of my invention consists in certain arrangements of skids or inclined ways with circular bearing-rims made with the wheels of cars or locomotives, together with the employment of elastic hangers and other devices used in this invention, all of which I will proceed to describe to enable others skilled in the art to make and use the same, reference being had to the accompanying drawing and to the letters of reference marked thereon, the same letters indicating similar parts.

In the drawing, A represents the usual frame-work of a truck or locomotive. B B are the usual wheels. C is the rail. On the inner side of the wheels B B, Figs. 1, 2, 4, and 6, I make projecting rims or flanges *a a*, or I fix on the axles of the said wheels bearing-wheels which would correspond with the said rims *a a* and act as equivalents of the same. Below the frame-work A I suspend two beams, F F, Fig. 2, in a truck, or a single beam, F, in a locomotive, as in Figs. 1 and 3. To the said beam or beams I attach the brake-shoes *f f*. When two beams, F, are used, as in a truck, Fig. 2, I use two other beams, F′ F′, which rest on the beams F F, as shown in Figs. 2 and 5. The beams F′ F′ resting on the beams F F are so placed that they will be directly under the rims *a a* of the wheels B B, as in Fig. 6. Beneath the bearing-rims *a a* I place a pair of skids or incline-ways, D D, Figs. 1, 2, 4, 6, 7, and 8, having, in a truck, their support on the beams F′ F′, as in Fig. 2, or their support may be had at one end on the beam F, Fig. 1, and by a hanger, E′, at the other end, as shown. These skids are made with curves or waves, as shown in Figs. 1 and 2, and are so placed under the flanges or bearing-rims *a a* of the wheels B B that the depressed portions of the said skids will be beneath the said flanges *a a* and almost in contact with them. The beams F′ F′ in a truck and F in a locomotive, which support the said skids D D, are suspended from the frame-work A of the truck by the elastic hangers E E. The said hangers E are made elastic by means of rubber or other equivalent springs. The buffer G, in a car, I make continuous throughout, as shown in Fig. 2, (broken in its line for convenience.) The said buffer consists of two pieces of timber, G G, Figs. 5 and 6, running longitudinally beneath the body of the car, properly supported and kept in place by guide-ways made in the cross-beams of the car, in which the said buffer can move longitudinally in either direction. To stiffen the two pieces G G laterally and make them as one in their action I stay and brace one with the other in the manner usually done in similar cases, (not shown in the drawing,) and also connect their ends with cross-head timbers G′ G′, Fig. 2. The buffer G, being thus constructed and arranged, can be moved longitudinally in either direction beneath the car. The car is to be supplied with at least one pair of trucks, constructed with these improvements and properly placed and secured to the car above, in the usual manner, by their king-bolts. The trucks are then connected to the buffer G by the chains, rods, or wire cables *r r′*, as shown in Fig. 2. The said rods or equivalents *r r′* used are at least four in number to each truck. Two of the said rods *r*, being connected to the buffer G (at any proper point,) are run to the distant end of the truck and connected with one of the beams F′, while the two other rods, *r′*, are connected with the buffer G at some other point distant from the rods *r* on the same, and to the other beam F, as shown. The

truck being secured to the car by its king-bolt and connected with buffer G by the rods *r* and *r'*, as described, will be maintained in the same relative place beneath the car, while the timbers F F carrying the shoes *f f*, and the beams F' F' carrying the skids D D, will be forced in a direction the same as the longitudinal movement of the buffer G, be such movement in either direction made. And whether the buffer G be moved in either direction, one pair of the rods *r* or *r'* will carry with the buffer, in the same direction, the skids D D in such a manner that the depressed portion of the said skids will pass out from under the bearing-flanges *a a* and be followed by the rising portion of the same so as to cause the skids at such places to bear against the lower sides of the said flanges *a a* and, consequently, cast or force down the timbers F F and their brake-shoes *f f* to make them effective to act on the rails C C. The momentum of a car, together with a sudden resistance offered to the buffer G, will, with my improvements, effect the above results. In a locomotive the buffer G may consist of a single piece, either of wood or iron; though I prefer to make the same of two pieces, as shown in Fig. 3, connected by a cross-head, G', Fig. 1. The said buffer works in the rear end of the frame-work of the locomotive, and has permission for a longitudinal movement in either direction. In the forward end of the buffer G I pivot a lever, *g*, which lever is attached to a shaft, *h*, Figs. 1, 3, and 7, and operated by a hand-lever, *h'*. The shaft *h* is also provided with a ratchet-wheel, *i*. Pivoted back of the said ratchet-wheel *i* is a handled dog, *k*, which is to hold the buffer thrust in when the lever *h'* is thrown in proper position by engaging into the teeth of the said ratchet-wheel. A coiled spring, *l*, Fig. 3, suitably attached, operates to draw the lever *g* back when not set or released; or a weight, *l'*, operated by the levers *m m'*, Fig. 9, may be used to operate the said lever *g*. Leading from the dog *k* is a rod, *k'*, which connects with a hinged cow-catcher, J, placed in front of of the locomotive, as shown in Fig. 1. When the handled dog *k* is thrown in the ratchet the rod *k'* will cast the lower end of the said cow-catcher forward, and, should the cow-catcher strike any obstacle, it would be thrown back and, by means of the rod *k'*, would throw the dog *k* out from contact with the ratchet-wheel *i*. I place between the pieces G G composing the buffer a bar or beam, H, which is suspended at its upper end by a suitable pivot, *n*, shown in Figs. 1, 3, and 7. The lower end of the said bar H is permitted to impinge against the cross-beam F.

The several improvements, being thus arranged and adapted to locomotives, operate as follows: The handled lever *h'*, Figs. 1 and 3, is thrown back from a position shown by dotted lines to that in full drawing, when the lever *g* will cause the buffer G to be drawn in from the dotted line *x'* to *x*, thereby freeing the suspended bar H from contact with beam F. The buffer G, being thus thrown in, is secured in place by throwing the dog *k* down so as to engage with the ratchet-wheel *i*. When the said dog *k* is thus thrown down the cow-catcher J will be brought in position from that shown by dotted lines to that shown in full lines in Fig. 1. When the cow-catcher (as the locomotive is moving over the rails C) strikes an obstacle it will be thrown back to dotted lines and cause the dog *k* to disengage with the ratchet-wheel *i*, when the spring *l* or the weight *l'* will cause the buffer to be thrown out to dotted lines *x'*. The out-throw of the buffer G carries with it the bar H, which bar acts on the brake-beam F and causes it to move back, as shown by dotted lines, carrying with it the skids D D. The momentum of the cars and locomotive acting at the same time, and also the revolution of the flanges *a a* in the the direction of the arrows, tend to cast the said flanges *a* upon the rising portions of the skids D, which skids are pressed down and carry with them the beam F and its brake-shoes *f f* to impinge tightly on the rails. While these operations are being performed the elastic hangers E are thrown back and lengthened, as shown by dotted lines in Fig. 1. Each car can be provided with a hand-lever, L, Fig. 2, by which their buffers G may be operated to produce the results before referred to, or to keep the brakes in constant action when required. When the wheels B have ceased to revolve the flanges *a* will fall into the sunken portions of the skids D, which skids, being then released of all pressure, will permit the elastic hangers to draw up from the rails the shoes *f* attached to the beams F.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the skids D D and flanges *a a* with the beams F F', shoes *f*, rods *r r'*, and buffer G, substantially as and for the purpose set forth.

2. The combination of the frame A, hangers E, beams F, and skids D, with the rods *r r'* and buffer G, substantially as and for the purpose set forth.

3. The combination of the buffer G, crank or lever *h*, hand-lever *h'*, ratchet-wheel *i*, and dog *k*, substantially as and for the purpose set forth.

4. The combination of a hinged cow-catcher, J, rod *k'*, and dog *k*, substantially as and for the purpose set forth.

5. The combination of the coiled spring *l*, (or its equivalent weighted lever,) levers *h* and *h'*, buffer G, and suspended beam H, substantially as and for the purpose set forth.

ADAM WELLSHMIDT.

Witnesses:
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JN 37 1895
DIVISION